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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/384,315	08/27/1999	ALAIN BOUILLLOUX	ATOCM-154	7591

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EXAMINER

SELLERS, ROBERT E

ART UNIT	PAPER NUMBER
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1712

13

DATE MAILED: 02/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

T-D-13

**Office Action Summary**

<b>Application No.</b> 09/384,315		<b>Applicant(s)</b> BOUILLOUX ET AL.	
<b>Examiner</b> Robert Sellers		<b>Art Unit</b> 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-40 is/are pending in the application.
- 4a) Of the above claim(s) 21,22,24-29,31,33-37,39 and 40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20, 22, 30, 32 and 38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                              |                                                                             |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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Claims 21, 22, 24-29, 31, 33-37 and 39 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to non-elected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 20, 23, 30, 32 and 38 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The rejection is maintained for the reasons set forth in the previous Office actions. The arguments filed October 22, 2001 have been considered but are unpersuasive.

The other forms of (A) and (C) found in the specification on page 3, line 38 to page 4, line 4; page 4, lines 23-24 and page 5, lines 11-17 are copolymers of ethylene and an unsaturated epoxide, or a bisphenol A diglycidyl ether which is an example of the "compound different from said unsaturated epoxide and having 2 epoxide functional groups" that is enabled and not the subject of this rejection. Page 5, lines 11-17 only describes a copolymer of ethylene and an unsaturated carboxylic acid. None of the aforementioned cited portions enable a compound containing one unsaturated and one epoxide group defined as (A), and a compound with one unsaturated and one carboxylic acid substituent denoted as (C).

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Page 1, lines 36-39 describes provides support for the claim language for (A) and (C) but does not enable one skilled in the art to make a crosslinked phase. In order to create a crosslinked phase, a polymer with at least two reactive functionalities (i) is reacted with a compound or polymer (ii) with at least two moieties reactive with the reactive functionalities of the polymer. The compound or polymer (ii) links at least two molecules of polymer (i) to form a network which yields a crosslinked phase. One reactive group from compound or polymer (ii) reacts with one functionality of a molecule of polymer (i) and the other reactive group from compound or polymer (ii) reacts with one functionality of a different molecule of polymer (i) to link the two molecules.

The network cannot be obtained unless at least one of the components is a reactive polymer. The network cannot form a crosslinked phase unless the compound or polymer (ii) possesses at least two groups reactive with the functionalities of polymer (i).

The claimed components (A) and (C) encompass the reaction of glycidyl(meth)acrylate as the unsaturated epoxide, and (meth)acrylic acid. Such a mixture of monomers reacts to yield a product without a three-dimensional crosslinked network owing to the lack of at least two mutually reactive substituents with (A) and (C). Accordingly, one skilled in the art is not enabled to attain a crosslinked phase from the aforementioned monomeric compounds.

The reaction of the unsaturated epoxide (A) and unsaturated carboxylic acid (C) with the ethylene/unsaturated anhydride copolymer (B) results in the grafting of the epoxide monomers onto copolymer (B) via reaction between the anhydride groups and epoxide group to form secondary hydroxyl and carboxyl groups, and between the epoxide group and secondary hydroxyl groups, and carboxylic acid group to form a blend of secondary hydroxyl ester groups and ester groups. Such a system merely provides a mixture of graft copolymers and hydroxyl ester monomers which does not yield the claimed crosslinked phase.

The copolymers disclosed in the specification as examples of (A) and (C) are polymerized from unsaturated epoxide and carboxylic acid monomers. No non-polymerized unsaturation remains after the copolymerization with ethylene since the addition reaction consumes the unsaturation to form the copolymer. Consequently, the copolymers are epoxide-, anhydride- or carboxylic acid-functional without any residual unsaturation, thereby violating the claimed requirement for the affirmative presence of unsaturation in unsaturated epoxide (A) and unsaturated carboxylic acid (C).

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Claims 20, 23, 32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spelthann.

The rejection is maintained for the reasons set forth in the previous Office actions. The arguments filed October 22, 2001 have been considered but are unpersuasive.

The claimed crosslinked phase is produced by melt-blending the thermoplastic polymer with the ethylene/unsaturated epoxide copolymer or diepoxide (A), the ethylene/unsaturated anhydride (B) and the ethylene/unsaturated carboxylic acid copolymer (C) (Specification, page 6, lines 28-35 and page 8, lines 6-11). Spelthann melt blends the non-polar thermoplastic polyolefin (1)(a), the anhydride-functional (col. 3, lines 36-39) compatibilizing polymer (1)(b), the carboxylic acid-functional polar ethylene-carbon monoxide copolymer (2)(a) (col. 4, lines 28-29) and the epoxide-functional polar ethylene compatibilizing copolymer (2)(b) in a twin-screw extruder (col. 5, lines 15-16) equivalent to the mixing means shown in the examples of the application. Accordingly, the melt-blended extrudate of Spelthann containing copolymers within the realm of claimed components (A), (B) and (C) inherently forms a crosslinked phase.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry regarding this Office action should be directed to Robert Sellers at telephone number (703) 308-2399. Any response thereto can be faxed to (703) 872-9311. The work schedule is Monday to Friday from about 9:15 A.M. to 5:45 P.M. EST.



Robert Sellers  
Primary Examiner  
Art Unit 1712

RS

2/14/02